

Dr Louis LSJ Krüger | Pr. Eng.

Senior Member of the SAIEE

Independent Consulting Professional Engineer, Academic Advisor & Mentor

Professional Profile

A registered Professional Engineer with over 40 years of cross-disciplinary experience in industrial automation, system integrity, mechanical design, and engineering management. Specialising in independent technical audits, asset life-cycle strategy, and the modernisation of high-value industrial machinery through sustainable, open engineering standards. Experienced in leading complex academic environments and bridging the gap between advanced research and practical industrial application.

Core Engineering & Strategic Expertise

- **Open-Architecture Migration Strategy:** Specialist advisory on replacing legacy or proprietary PLCs with high-performance, open-architecture control systems to mitigate single-supplier dependency.
- **Strategic Sourcing & Risk Resilience:** Developing hardware-agnostic industrial standards to enable multi-vendor component sourcing, mitigating supply-chain vulnerabilities.
- **System Revitalisation Audits:** Evaluating aging, "black box" electronic units to design transparent, locally diagnosable control environments for industrial machinery.
- **Legacy Hardware Asset Mitigation:** Identifying critical single-points-of-failure in proprietary controller cards to prevent catastrophic production downtime and "stranded asset" scenarios.
- **High-Value Mission-Critical Systems:** Leveraging extensive engineering history with major strategic systems (SANDF, Iscor, Armscor) to provide long-term modernisation strategies for the printing and manufacturing sectors.

Academic Leadership & Postgraduate Mentorship

An established academic foundation committed to the structural advancement of the South African engineering and technological sectors:

- **Doctorate in Engineering Management (D Ing):** University of Johannesburg.
- **Postgraduate Research Mentorship:** Successfully guided and mentored over **80 Masters and Doctoral students** through complex research, development, and dissertation phases.
- **Institutional Impact:** Served as a Senior Lecturer at the **University of Pretoria, University of Johannesburg**, and **Tshwane University of Technology (TUT)**.
- **Educational Scale:** Spearheaded curricula and lectured on Engineering Professionalism and Technological Entrepreneurship to thousands of engineering students.

Professional Integrity & Confidentiality

All consulting engagements are conducted under the strict code of professional conduct required of a **Pr. Eng.**. Backed by a proven record of managing complex engineering vulnerabilities within stringent confidentiality frameworks and Non-Disclosure Agreements (NDAs).

Contact Information

Phone: +27 (0)84 215 3275 | Email: llsjk@lakruger.za.org
Web: www.lakruger.za.org | LinkedIn: [linkedin.com/in/louiskruger](https://www.linkedin.com/in/louiskruger)
